What is claimed is:

1. An extruded structural member having improved damage tolerance, said structural member comprising:

at least one area having a substantially unrecrystallized microstructure with intentionally increased amounts of fiber texture to reduce the rate of fatigue crack growth in said extruded structural member.

2. The extruded structural member of claim 1 wherein said least one area has an intentionally increased amount of <100> and <111> fiber components.

3. The extruded structural member of claim 1 wherein said intentionally increased fiber texture of said least one area is formed by intentionally extruded local geometries which promote primarily axisymmetric metal flow and then removing excess metal in said local geometries.

4. The extruded structural member of claim 1 wherein said structural member has at least one pair of structural stiffening members and said least one area is an intra-stiffener area formed between said pair of structural stiffening members.

5. The extruded structural member of claim 4 wherein said intentionally increased fiber texture of said intra-stiffener area is created by intentionally extruded local geometries which promote primarily axisymmetric metal flow and then machining said local geometries which promote primarily axisymmetric metal flow after extrusion.

6. The extruded structural member of claim 4 wherein said intentionally increased fiber texture of said intra-stiffener area is created by intentionally extruded local geometries which promote primarily axisymmetric metal flow and then milling said local geometries which promote primarily axisymmetric metal flow after extrusion.

7. The extruded structural member of claim 4 wherein said intentionally increased fiber texture of said intra-stiffener area is created during extrusion by the use of spreaders in the die used to form the extrusion.

8. The extruded structural member of claim 4 wherein said intentionally increased fiber texture of said intra-stiffener area is created during extrusion by the use of feeder plates or double extrusion.

9. The extruded structural member of claim 4 wherein said structural stiffening members have a T-shaped cross-sectional area.

10. The extruded structural member of claim 4 wherein said structural stiffening members have a J-shaped cross-sectional area.

11. The extruded structural member of claim 4 wherein said structural stiffening members have a L-shaped cross-sectional area.

12. The extruded structural member of claim 4 wherein said structural stiffening members have a hat-shaped cross-sectional area.

13. The extruded structural member of claim 4 wherein said structural stiffening members have a Z-shaped cross-sectional area.

14. The extruded structural member of claim 4 wherein said structural stiffening members are substantially parallel.

15. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a single aluminum alloy.

16. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from at least two aluminum alloys which are co-extruded.

17. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a substantially unrecrystallized extrusion selected from the group consisting of 2xxx, 5xxx, 6xxx, 7xxx and 8xxx alloys.

18. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a substantially unrecrystallized extrusion selected from the group consisting of 2x24, 2x26, 2x27 and 2x2x alloys.

19. The extruded structural member of claim 1 wherein said local geometries which promote primarily axisymmetric metal flow are selected from the group consisting of circles, squares, polygons and irregular shapes with aspect ratio within the range of about 0.5 to about 2.0.

20. The extruded structural member of claim 1 wherein said structural member has increased fatigue crack growth resistance.

21. The extruded structural member of claim 1 wherein said structural member has increased resistance to fatigue initiation.

22. The extruded structural member of claim 1 wherein said structural member has increased toughness.

23. The extruded structural member of claim 1 wherein said structural member is a monolithic structure.

24. The extruded structural member of claim 1 wherein said structural member is an integrally stiffened panel.

25. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a substantially unrecrystallized extrusion, said extrusion comprising:

about 3.6 to about 4.9 wt. % copper,
about 1.0 to about 1.8 wt. % magnesium,
about 0.15 to about 0.9 wt. % manganese,
about 0.05 to about 0.25% zirconium,
less than about 0.25% zinc,
less than about 0.8 silver,
less than about 0.3% iron,
less than about 0.25% silicon,
the balance substantially aluminum, incidental elements and impurities.

26. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a substantially unrecrystallized extrusion selected from the group consisting of 7xxx, 7x50, 7x55 and 7085 alloys.

27. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a substantially unrecrystallized extrusion selected from the group consisting of 2x9x and 8x9x alloys.

28. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a substantially unrecrystallized extrusion selected from the group consisting of aluminum 2xxx, 5xxx, 6xxx, 7xxx and 8xxx alloys containing lithium.

29. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a substantially unrecrystallized extrusion, said extrusion comprising:

about 0.5 to about 2.7 wt. % lithium,
about 1.0 to about 4.5 wt. % copper,
less than about 1.3 wt. % magnesium,
about 0.15 to 0.9 wt. % manganese,
about 0.04 to about 0.16% zirconium,
less than about 0.25% zinc,
less than about 0.8 silver,
less than about 0.3% iron,
less than about 0.20% silicon,

the balance substantially aluminum, incidental elements and impurities.

30. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a substantially unrecrystallized extrusion selected from the group consisting of aluminum alloys containing less than about 3.0% lithium.

31. The extruded structural member of claim 1 wherein said extruded structural member is fabricated from a substantially unrecrystallized extrusion selected from the group consisting of Al-Cu-Mg-Ag system.

32. The extruded structural member of claim 1 wherein said extruded structural member is useful in aerospace structures of the group consisting of rib stiffening sections for wing box, empennage and fuselage.

33. The extruded structural member of claim 1 wherein said extruded structural member is useful in aerospace structures of the group consisting of stiffening members, spars, stringers, stiffeners, monolithic spar caps and built-up spar caps.

34. An extruded structural member having improved damage tolerance, said structural member comprising:

a base section;

a stiffening section having at least one pair of structural stiffeners, said structural stiffeners are integral with said base section and projecting outwardly thereof; and

at least one intra-stiffener area positioned between said pair of structural stiffeners, said intra-stiffener area having a microstructure with intentionally increased amounts of fiber texture to reduce the rate of fatigue crack growth in said extruded structural member.

35. A wrought aluminum alloy structural member having improved fatigue crack growth resistance, said structural member comprising areas with intentionally increased fiber texture.

36. The wrought aluminum alloy structural member of claim 34 fabricated by rolling.

37. The wrought aluminum alloy structural member of claim 34 fabricated by a method comprising:

rolling an ingot section having a height is 2-4 times its width, and

reducing the ingot by rolling so that the ratio of half the entry width to the contact length of the plate and roll is less than 1.75 to produce an unrecrystallized product.